

REMARKS

Status

This Amendment is responsive to the Office Action dated August 12, 2009, in which claims 1-8, 15-28, 35-41, 47, 48, and 53-55 were rejected. Claims 4-5 and 24-25 have been canceled without prejudice or disclaimer of the subject matter; and claims 1-3, 6-23, and 26-55 have been amended. Accordingly, claims 1-3, 6-23, and 26-55 are pending in the application, and are presented for reconsideration and allowance. No new matter has been added.

Claim Rejection - 35 USC 102

Claims 1-3, 15-16, 19-23, 35-36, 39-41, 48, 53 and 55 stand rejected under 35 USC 102(b) as being anticipated by US Patent No. 6,454,460 (*Ramanathan et al.*). This rejection is respectfully traversed.

The Examiner has rejected both independent claims 1 and 22 as being anticipated by *Ramanathan et al.* Applicant respectfully disagrees with the Examiner's rejection and submits that *Ramanathan et al.* does not disclose, teach, or suggest all the features of independent claims 1 and 22.

Independent claim 1 has been amended to recite, *inter alia*,

- processing the digital image output signal, wherein the processing comprises, forming a curve giving the number of pixels of the digital image output signal per gray level, and determining the extreme amplitude values (max, min) of the curve's digital gray levels to obtain a report indicating an x-ray exposure level that has been used to deliver said analog image output signal, and wherein the report indicating the exposure level corresponds to an exposure level classified as under-exposure, correct exposure or over-exposure.

In a similar manner, independent claim 22 has been amended to recite, *inter alia*,

a processing unit configured to form a curve giving the number of pixels of the digital image output signal per gray level, to determine extreme amplitude values (max, min) of the curve's digital gray levels, and to obtain a report indicating the x-ray exposure level that has been used to deliver said analog output signal, wherein the report indicating the exposure level

corresponds to an exposure level classified as under-exposure, correct exposure or over-exposure.

Applicant submits that *Ramanathan et al.* does not disclose a processing unit that processes digital image output signals as claimed, for example, including “forming a curve giving the number of pixels of the digital image output signal per gray level, and determining extreme amplitude values (max, min) of the curve’s digital gray levels.” In addition, the Examiner also admits *Ramanathan et al.* does not disclose or suggest these features. See, the Office Action mailed August 12, 2009, the rejection of claims 4-5 and 24-25. Rather, *Ramanathan et al.* appears to disclose a method of generally determining X-ray exposure using real-time signal sequences and issuing various reports. See, e.g., column 5, lines 45 to 63.

Therefore, Applicant submits that *Ramanathan et al.* does not disclose or teach all the features of independent claims 1 and 22. Nor does *Ramanathan et al.* disclose or suggest dependent claims 2-3, 6-21, 23, and 26-55, at least because of the claims depending from allowable base claims.

Claim Rejection - 35 USC 103

Claims 4-8, 17-18, 24-28, 37-38, 47 and 54 stand rejected under 35 USC 103(a) as being unpatentable over *Ramanathan et al.* in view of US Patent No. 5,970,164 (*Bamberger et al.*). This rejection is respectfully traversed.

As discussed above, *Ramanathan et al.* does not teach or suggest all the features of the amended independent claims. As the features of canceled claims 4-5 and 24-25 have been incorporated into amended independent claims 1 and 22, respectively, Applicant further submits that the combination of *Ramanathan et al.* in view of *Bamberger et al.* also does not teach or suggest all of the features recited in the independent claims.

The Examiner cited *Bamberger et al.* as curing the deficiencies of *Ramanathan et al.* However, *Bamberger et al.* teaches a method of diagnosing areas of an X-ray image by “tone-scale transformation or grey scale stretching.” See, *Bamberger et al.*, column 7, lines 38 to 67. Applicant submits that this is a

different method than claimed, as there is no teaching or suggestion of determining extreme amplitude values of a curve indicating the number of pixels per gray level. The method taught by *Bamberger et al.* is used on an X-ray image to further diagnose what is shown in the X-ray image by adjusting the gradient grey level for each pixel, not to determine exposure level for a given X-ray output by determining extreme amplitude values. For example, the method taught by *Bamberger et al.* would be inaccurate if the X-ray exposure was classified as “under-exposure” or “over-exposure,” as claimed. In addition, the reference does not use the gray scale stretching method to determine current X-ray exposure levels or to adjust future X-ray exposure levels, nor does *Bamberger et al.* teach or suggest how such a method could be used to determine exposure levels.

Therefore, Applicant submits that the combination of *Ramanathan et al.* and *Bamberger et al.* does not teach or suggest all the claimed features. As discussed above, *Ramanathan et al.* teaches general methods of determining X-ray exposure, but do not teach or suggest the claimed specifics. With regard to *Bamberger et al.*, this reference does not discuss determining any type of X-ray exposure level, but addresses how to determine the margins of a mass shown on an X-ray image by adjusting the gray scale of a set of pixels. Thus, Applicant submits that it would not have been obvious to one of ordinary skill in the art to have combined *Ramanathan et al.* with *Bamberger et al.*, to achieve the claimed features, at least because not all of the claimed features are shown and the references address different issues related to X-rays.

In view of the above, Applicant submits that independent claims 1 and 22 are allowable over the cited art as are dependent claims 2-3, 6-21, 23, and 26-55, at least for depending from allowable base claims.

Allowable Subject Matter

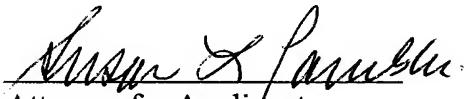
Claims 9-14, 29-34, 42-46, and 49-52 have been indicated as including allowable subject matter. Applicant thanks the Examiner for this indication, but believes that all claims as amended are allowable.

Summary

Should the Examiner consider that additional amendments are necessary to place the application in condition for allowance, the favor is requested of a telephone call to the undersigned counsel for the purpose of discussing such amendments.

For the reasons set forth above, it is believed that the application is in condition for allowance. Accordingly, reconsideration and favorable action are respectfully solicited.

Respectfully submitted,



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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Carestream Health, Inc. at 585/627-6687 or 585/627-6740.